
Household Expenditures on Vitamins and Minerals by Income Level

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A version of this research brief, along with other articles examining the use of food stamps to purchase dietary supplements, appears in “The Use of Food Stamps to Purchase Vitamin and Mineral Supplements” (Food and Nutrition Service, U.S. Department of Agriculture, September 1999).

The Federal Food Stamp Program provides a nutritional safety net for low-income households by giving eligible individuals allotments that may be used to purchase food. These allotments are based on the Thrifty Food Plan, a minimal cost of a nutritious diet in the United States. Although most foods can be purchased with the allotments, dietary supplements (vitamins, minerals, and other nutritional supplements, such as herbal products and amino acids) have been excluded.

The recent welfare reform act (Personal Responsibility and Work Opportunity Reconciliation Act of 1996) required the U.S. Department of Agriculture (USDA) to conduct a “... study of the use of food stamps to purchase vitamins and minerals” (Section 855). One specific request was a study on “... the purchasing habits of low-income populations with regards to vitamins and minerals.” To address these purchasing habits, this paper examines low-income households’ expenditures on vitamins and minerals and compares their expenditures with those of non low-income households.

Research on dietary supplements has focused primarily on use. One study found that in 1992, 46 percent of the U.S. population reported taking a vitamin or mineral supplement in the past year (9). An earlier study found that in 1987, 23 percent of the population reported

taking a daily vitamin or mineral supplement (13). Characteristics associated with vitamin/mineral use include being female (3,8,12,13), being White (3,5,13), having a higher education (3,5,8), having a higher income (3,5,8), and being older (5,8,13). In addition, residing in the West (3,12), consuming more fruits and vegetables (6), playing a sport (10), and having some health problems (2) were associated with vitamin/mineral use. Multivitamins, vitamin C, calcium, and iron were the most commonly consumed dietary supplements (7,12,13).

Although there has been considerable research on the use of dietary supplements, almost none has focused on people’s expenditures and other purchasing habits regarding these supplements. According to industry estimates, total retail sales in 1992 were \$2.7 billion for vitamins, \$0.5 billion for minerals, and \$0.5 billion for other nutritional supplements, for a total of \$3.7 billion (4). Multivitamins and vitamin C supplements account for the largest percentage of these sales (4). According to Applied Biometrics (1), people purchase dietary supplements most often at drugstores, and the main reasons they report taking supplements are to prevent disease and increase energy.

One unused source of information regarding expenditures on dietary supplements is the Diary component

of the Consumer Expenditure Survey (CE). These data were used in this study to examine household purchases of dietary supplements.

Data and Sample

The Diary component of the CE, conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS), is an ongoing survey that collects data on food and other selected expenditures, income, and major sociodemographic characteristics of consumer units. A consumer unit consists of either (1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements; (2) two or more people living together who pool their incomes to make joint expenditure decisions; or (3) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent.

A national sample of consumer units, representing the civilian noninstitutionalized population, was selected and asked to keep an expenditure Diary, which covers two consecutive 1-week periods. Every year the CE surveys about 5,000 different consumer units throughout the year. Each week of diaries is deemed an independent sample by BLS.

For this study, data from the 1994 CE Diary were used. The 1-week diaries were linked so that information on a consumer unit's food and other selected expenditures could be obtained for a 2-week period. This was done because it is unlikely that people purchase dietary supplements on a weekly basis. Only units that were complete income reporters and contained only one household in the

housing unit were included. Complete income reporters provide values for major sources of income, such as wages and salary, interest and dividends, and Social Security. Consumer units with one household (the two terms will be used interchangeably from this point on) were included to avoid confusion over which household made the purchase.

Low-income households were then selected from the data set. Low income was defined as having before-tax income less than or equal to 130 percent of the poverty threshold for a respective household size. This definition is used to determine eligibility for food stamps. The final sample consisted of 833 low-income households. To place the expenditures and other characteristics of these households in perspective, USDA researchers also selected a random sample of 833 non low-income households. (Non low-income households were defined as those with before-tax income above 130 percent of the poverty threshold for a respective household size.)

The CE public-use tape contains information on total over-the-counter drug purchases of households; 216 of the low-income households and 305 of the non low-income households had over-the-counter drug purchases. The individualized expenditures constituting these over-the-counter drug purchases, such as expenditures on aspirin, cough medicine, and vitamins or minerals, are recorded in the actual CE diaries but are not reported on the public-use tapes. To obtain expenditures on vitamins or minerals, a USDA team of researchers examined the actual diaries of the 521 (low-income and non low-income) households reporting expenditures in the over-the-counter drug category. These diaries are located at BLS; working at BLS, the USDA team used identification numbers to match

data on the public-use tape and the diaries. In the diaries, consumer units recorded purchases of vitamins or minerals by type (e.g., vitamin C or calcium), brand name (e.g., One-A-Day or Centrum), or simply as "vitamin or mineral." The respondent chose how to record these purchases. Because researchers could not group these purchases (with a reasonable degree of accuracy) by type of vitamin or mineral, all purchases of vitamins and minerals were totaled.

Other nutritional supplements (e.g., amino acids and herbs) were grouped under "other" food. BLS provided a list of all households with such expenditures in the 1994 CE, and researchers examined these diaries for purchases of other nutritional supplements. Few households reported expenditures on these other dietary supplements, and almost none were in the sample of 1,666 low-income and non low-income households. Expenditures on these other dietary supplements were, therefore, not examined in this study. Some of these other nutritional supplements could be listed simply as "other" food, so the actual percentage of people purchasing them is higher. Consequently, these cases could not be identified.

Results

The characteristics of the low-income sample (table 1) are consistent with Census findings of the low-income population (14). Most heads or co-heads of low-income households¹ were not married, had a high school diploma or less, and were either under 30 or over 59 years old. Most low-income households reported not receiving food stamps in the past year. This may

¹The head or co-head was defined as the person who owns or rents the home; in cases of joint ownership or renting status, the head or co-head is decided arbitrarily.

Table 1. Characteristics of households, by income, 1994

Characteristics	Low-income households n = 833	Non low-income households n = 833
	<i>Mean</i>	
Before-tax income*	\$8,780	\$45,560
Weekly food expense*	\$54	\$87
Household size	2.6	2.6
	<i>Percent</i>	
Age (years)*¹		
Less than 30	21	14
30 - 39	19	24
40 - 49	14	24
50 - 59	9	14
60 and over	37	24
Education*¹		
Less than high school	41	13
High school diploma	29	31
Some college	22	24
College degree	8	32
Race*¹		
White	77	89
Non-White	23	11
Family type*		
Husband-wife with children	20	33
Husband-wife without children	9	23
Single-parent with children	17	5
Single	36	24
Other ²	18	15
Housing tenure*		
Own	42	72
Rent	58	28
Food stamp receipt*		
Receive	31	2
Do not receive	69	98
Region*		
Urban		
Northeast	16	20
South	29	26
Midwest	23	20
West	18	21
Rural	14	13

*Significant difference at .05 level.

¹Age, education, and race are for the reference person or household head or co-head, who is the person who owns or rents the home; when there is joint ownership or renting status, the head or co-head is decided arbitrarily.

²Other consists of husband-wife and single-parent families residing with others, besides their own children, and grandparents and others providing primary care for children.

seem surprising; however, eligibility for food stamps requires an asset and income qualification. Also, many households eligible for food stamps do not participate in the program; they are unaware of their eligibility or choose not to apply (11).

Most characteristics between low-income and non low-income households were significantly different (at the .05 level); the exception was household size.

Weekly food expenses were less for low-income households than for non low-income households, although their household size was the same. A higher percentage of low-income households had a head or co-head that was either less than 30 or over 59 years old, had less than a high school diploma, and were non-White. In addition, a higher percentage of low-income households were headed by a single parent or single person, rented their home, and received food stamps. A small percentage of non low-income households (2 percent) reported receiving food stamps in the past year. Although the overall income of non low-income households makes them ineligible for food stamps, they may have qualified for some month in the previous year because of temporary unemployment or another reason.

Of the 833 low-income households in the sample, only 30 had purchased vitamins or minerals (3.6 percent), and of the 833 non low-income households, 51 had purchased vitamins or minerals (6.1 percent) (table 2). The low percentage of households reporting vitamin or mineral expenditures over a 2-week period was surprising. Analysis of the USDA's 1994 Continuing Survey of Food Intakes by Individuals revealed that 30 percent of all individuals reported taking a dietary supplement every day or almost every day. Why this large discrepancy? Typically, dietary

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Table 2. Vitamin and mineral expenditures by households over a 2-week period, by income, 1994

	Low-income households	Non low-income households
Percent of households with expenditure* ¹	3.6	6.1
Average expenditure of those with expense ²	\$8.58	\$10.76

*Significant difference at .05 level.

¹Percentages based on sample of 833 low-income households and 833 non low-income households.

²Average based on 30 low-income households and 51 non low-income households.

supplements are purchased in relatively large quantities, such as containers with 100 or more capsules. Households would likely consume the product over a few weeks; they will not need to replenish the product every other week.

For low-income households with the expense, the average expenditure on vitamins and minerals over 2 weeks was \$8.58, and it ranged from \$0.99 to \$35.90. Most of these households had vitamin or mineral expenditures under \$10 for the 2-week period. For non low-income households with the expense, the average expenditure was \$10.76. It ranged from \$0.10 to \$75 and was not significantly different from that of low-income households. Most of these households also had vitamin or mineral expenditures under \$10 for the 2-week period.

Conclusion

Over a 2-week period, few low-income households purchased vitamins or minerals. Because a 2-week period is unlikely to capture most expenditures on vitamins and minerals, many more low-income people are likely to have purchased supplements. To get a clearer picture

of expenditures on dietary supplements by low-income households, researchers need to track these expenditures over a longer time. The CE does have an Interview component that examines households' expenditures over a 3-month period. This component collects overall food expenditures and expenses on other major budgetary components. However, it does not contain expenses on dietary supplements. Given how frequently households purchase dietary supplements, it would be better to use the Interview component of the CE to collect such expenses.

Other studies by the Center for Nutrition Policy and Promotion will examine the dietary supplement behavior of low-income people. These studies will provide policymakers with a better understanding of the dietary supplement behavior of the low-income population upon which policy may be based.

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